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<b>(21) International Application Number:</b> PCT/US99/26133 <b>(22) International Filing Date:</b> 5 November 1999 (05.11.99)  <b>(30) Priority Data:</b> 60/107,404                      6 November 1998 (06.11.98)                      US  <b>(71) Applicant (for all designated States except US):</b> EMORY UNIVERSITY [US/US]; 2009 Ridgewood Drive, Atlanta, GA 30322 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> KINKADE, Joseph, M., Jr. [US/US]; 2384 Burnt Creek Road, Decatur, GA 30033 (US). SHAPIRA, Raymond [US/US]; 954 Liawen Court, N.E., Atlanta, GA 30329 (US). JENSEN, Peter, E. [US/US]; 2375 Cumberland Court, Snellville, GA 30078 (US). LE, Ngoc-Anh [US/US]; 723 Carlyle Lake, Decatur, GA 30033 (US). POHL, Jan [US/US]; 4093 Gladney Drive, Doraville, GA 30340 (US). BROWN, W., Virgil [US/US]; 3208 Habersham Road, Atlanta, GA 30305 (US).		<b>(74) Agents:</b> DOUGHTY, Susan, K. et al.; Greenlee, Winner and Sullivan, P.C., Suite 201, 5370 Manhattan Circle, Boulder, CO 80303 (US).  <b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>

**(54) Title:** BIOMARKERS FOR OXIDATIVE STRESS**(57) Abstract**

This invention relates generally to methods of detecting and quantifying biomarkers of oxidative stress in proteins. The biomarker may be any amino acid that has undergone oxidation (or other modification, e.g. chloro-tyrosine, dityrosine). Emphasis is given herein to oxidized sulfur- or selenium-containing amino acids (SSAA). The biomarker of oxidative stress in proteins may be detected with an antibody that binds to oxidized amino acids, specifically oxidized sulfur- or selenium-containing amino acids. The antibody may be monoclonal or polyclonal. The presence of biomarker or amount of biomarker present in a sample may be used to aid in assessing the efficacy of environmental, nutritional and therapeutic interventions, among other uses.

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